Emerging Skills Trends: A data analysis story

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IBM Developer

SKILLS NETWORK

OUTLINE

- **Executive Summary**
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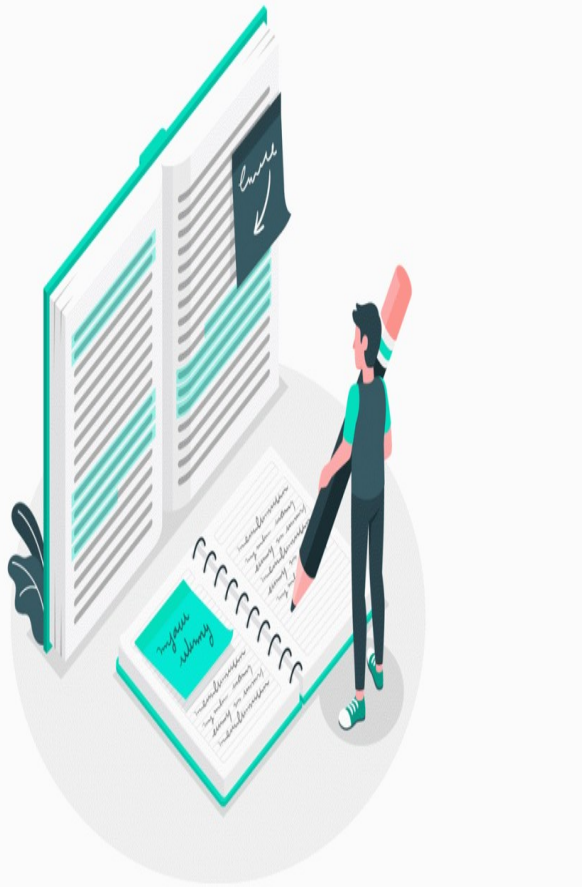
- **Methodology**
- **Results**
  - Visualization – Charts
  - Dashboard
- **Discussion**
  - Findings & Implications
- **Conclusion**
- **Appendix**

EXECUTIVE SUMMARY



- To stay competitive in the fast-changing global IT sector, it's essential to keep up with evolving technologies. This report, through data analysis, identifies current and projec trends in developers' skill requirements.
- There is a clear trend towards languages that support newer technologies This trend likely reflects the increasing demand for up to date skills and also an Need in data science, AI, mobile development, and large-scale application development. As a result, professionals and organizations should consider focusing their training and recruitment efforts on these emerging languages to stay competitive in the evolving tech landscape.
- There is a clear and growing interest in NoSQL databases like MongoDB and Redis. Thi shift aligns with the increasing complexity and scale of modern applications, which rec more flexible data solutions. Additionally, niche databases like Elasticsearch, MariaDB, Firebase highlight the importance of choosing the right database for specific use cases emphasizing that one size does not fit all in the world of data management. Organizat adopt the technologies that best fit their needs and future-proof their operations.
- The collected data shows that the software developer profession remains predominan Male, with a very small representation of Women. Additionally, the profession is prima concentrated in North America, India, and Europe.

INTRODUCTION

- The goal of this analysis is to attempt to answer this questior
  - **What are the most in-demand programming languages?**
  - **Which are the most sought-after database skills?**
  - **Which are the most popular IDEs?**
- Understanding these key areas will provide valuable insights into the evolving technology landscape and help guide training and development efforts for professionals aiming to remain competitive.

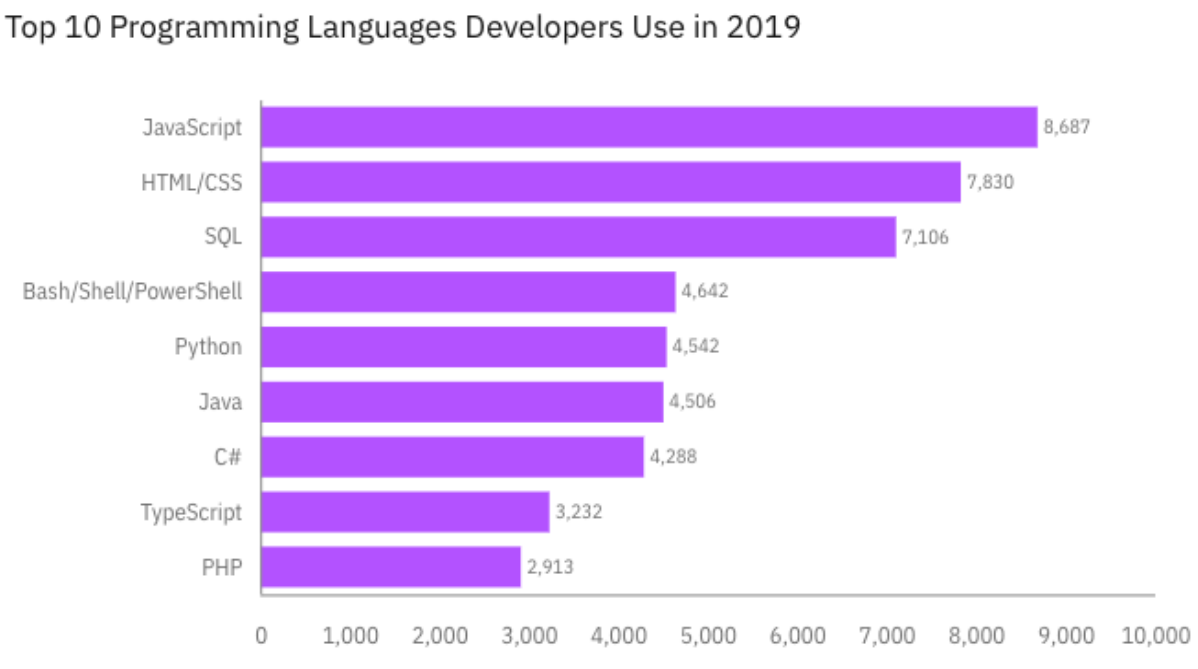
METHODOLOGY

- **Data collection**
  - Git Hub Job posting API
  - IBM Training portal
  - 2019 Stack Overflow Developers Survey
- **Data Wrangling**
- **Exploratory Data Analysis**
- **Data Visualization**
- **Dashboard:**
  - Trends and Patterns Identification

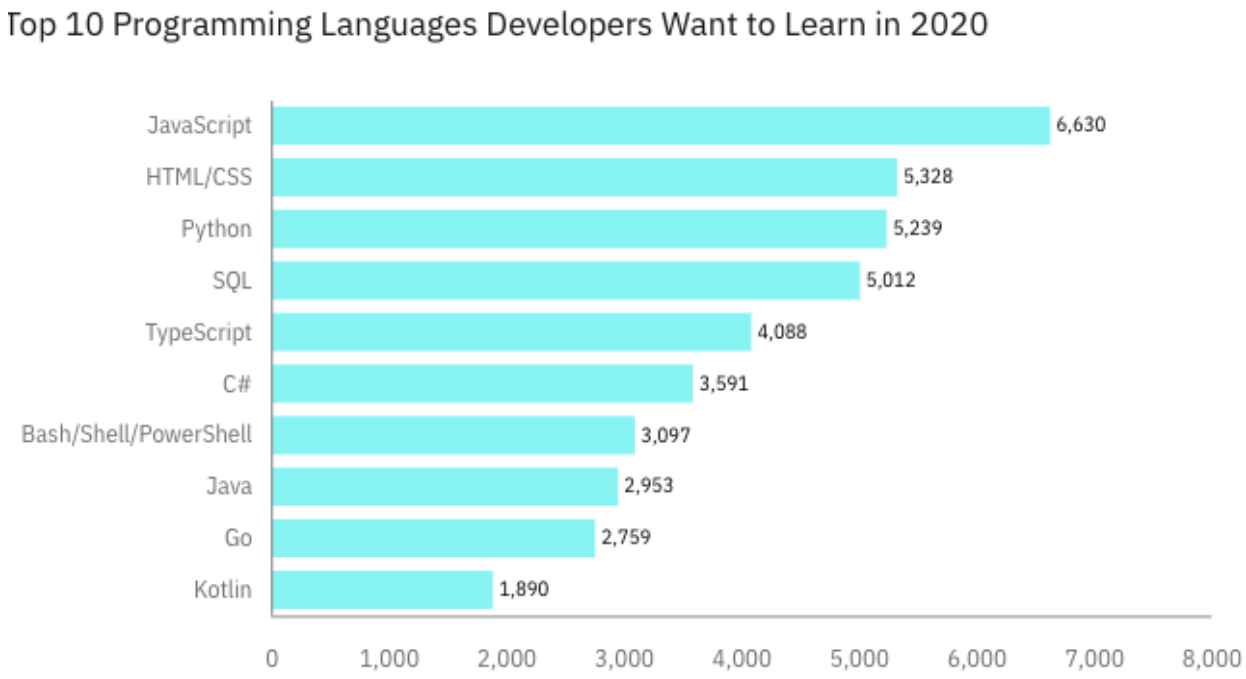
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

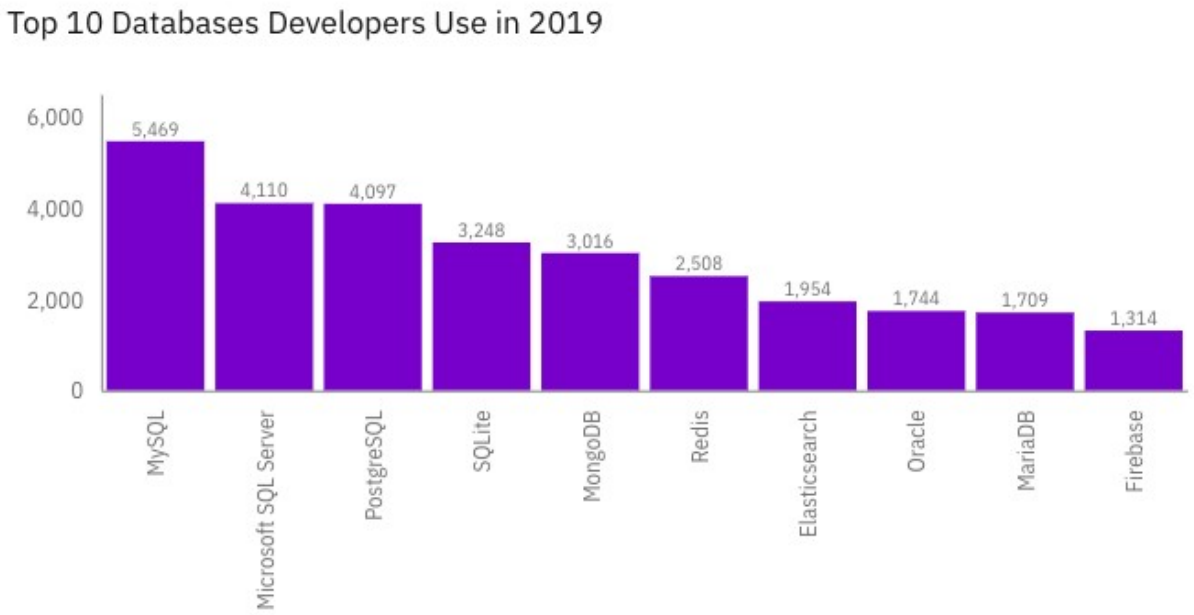
- Popularity of JavaScript
- HTML/CSS Consistency
- Python's Rising Popularity
- Decline in Interest for Bash/Shell/PowerShell

Implications

- JavaScript's versatility and its critical role in web development
- HTML/CSS is essential for web development, ensuring its persistent relevance
- Python's growing popularity can be attributed to its simplicity and broad applications in data science, AI, machine learning, and web development.

DATABASE TRENDS

Current Year



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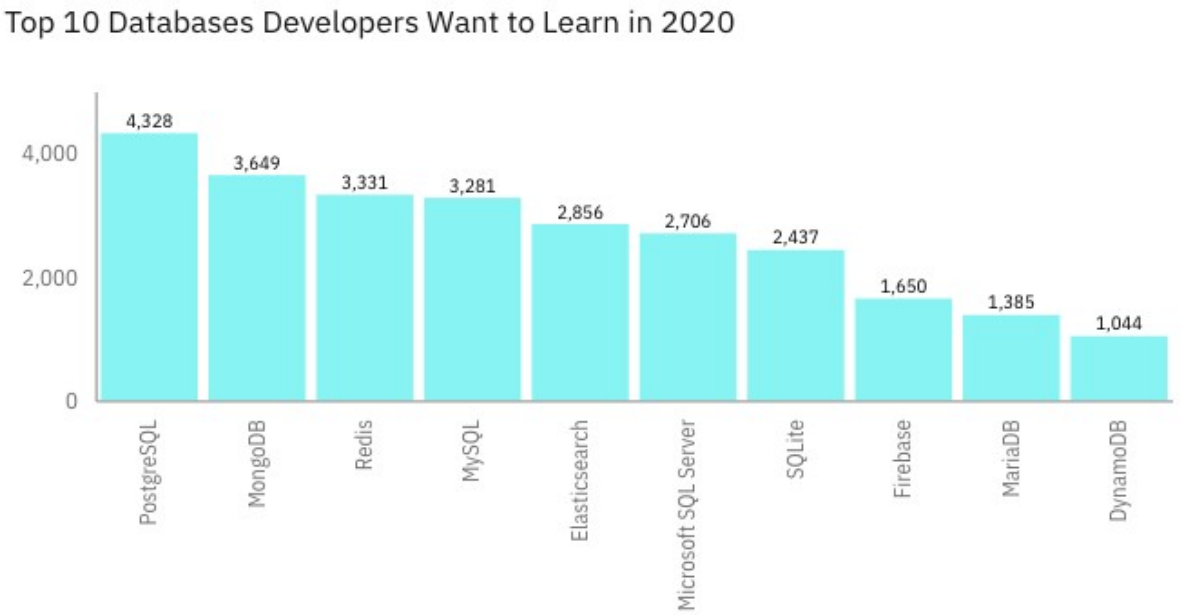


DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL Dominance
- Rising Popularity of NoSQL Databases
- Niche but Important Databases

Implications

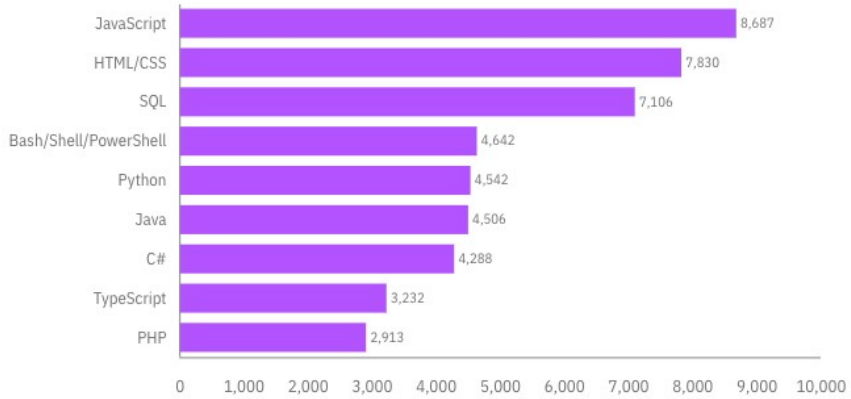
- While traditional RDs continue to dominate the market, there is a clear and growing interest in NoSQL databases
- The presence of MongoDB and Redis reflects the increasing demand for flexible, schema-less data storage solutions
- Niche databases like Elasticsearch, MariaDB, and Firebase highlight the importance of choosing the right database for specific use cases

DASHBOARD

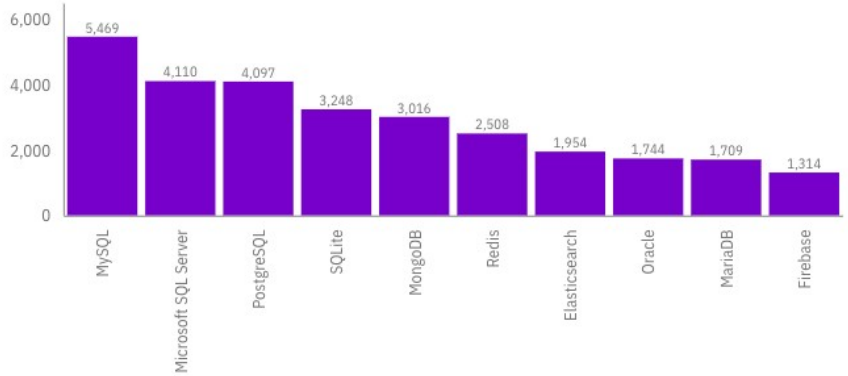
IBM Cognos – Stack Overflow Developers Survey Analysis

CURRENT TECHNOLOGY USAGE

Top 10 Programming Languages Developers Use in 2019

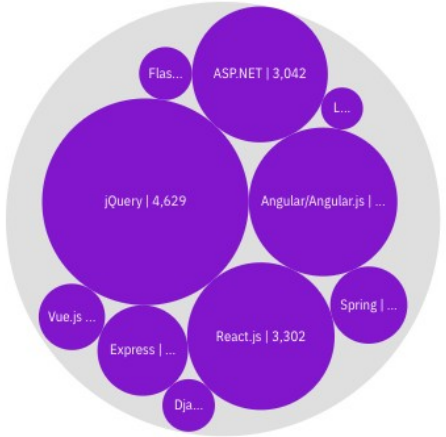


Top 10 Databases Developers Use in 2019



Top 10 Platforms Developers Use in 2019

Top 10 Web Frameworks Developers Use in 2019



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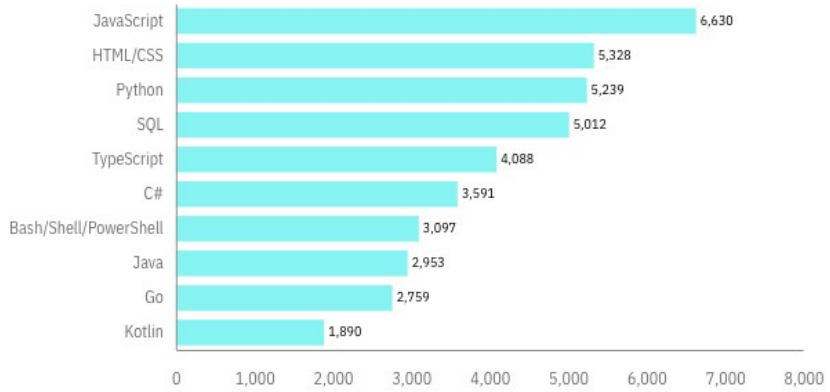
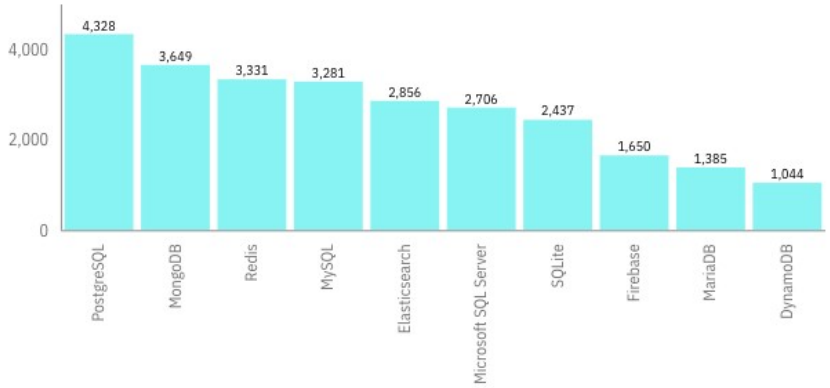
FUTURE TECHNOLOGY TREND

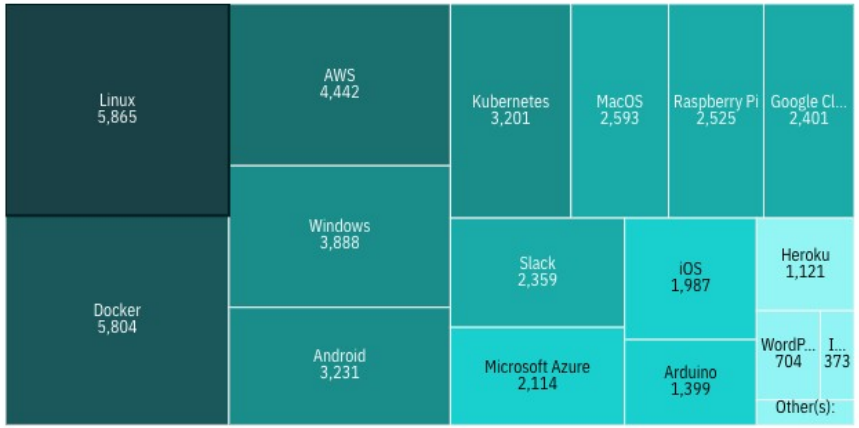
Top 10 Programming Languages Developers Want to Learn in 2020



Top 10 Databases Developers Want to Learn in 2020



Top 10 Platforms Developers Want to Learn in 2020



Top 10 Web Frameworks Developers Want to Learn in 2020

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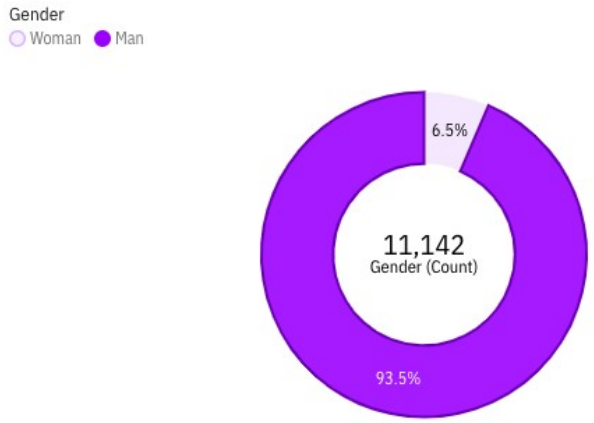
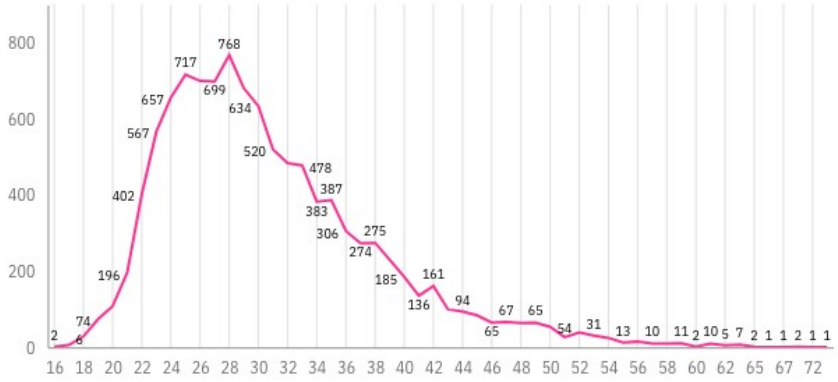
DEMOGRAPHICS

Developers Classified by Gender

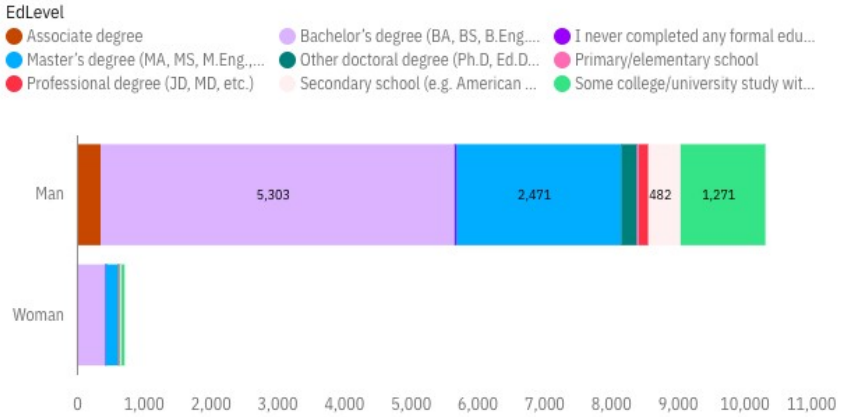


Developers Distribution by Country

Developers Grouped by Age



Developers' Education Levels Analyzed by Gender



DISCUSSION

- Future Trends
- Regional Concentration
- Diversity and Inclusion
- Cultural and Structural Barriers
- Personal Experiences and Perspectives

OVERALL FINDINGS & IMPLICATIONS

Findings

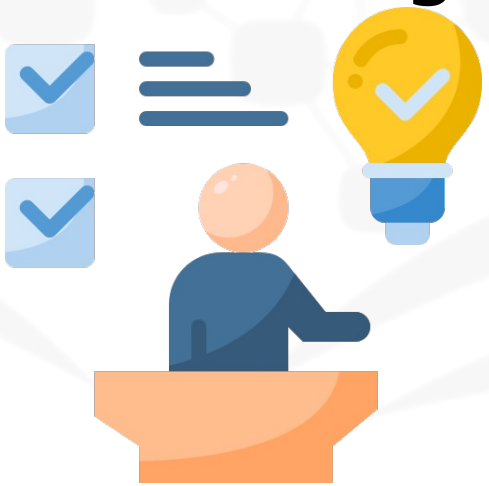
- JavaScript, HTML/CSS, and SQL continue to be fundamental
- Python, TypeScript, Go, and Kotlin are gaining traction
- MySQL remains dominant in the market
- IDEs that support emerging languages and databases will be increasingly important
- Gender Representation

Implications

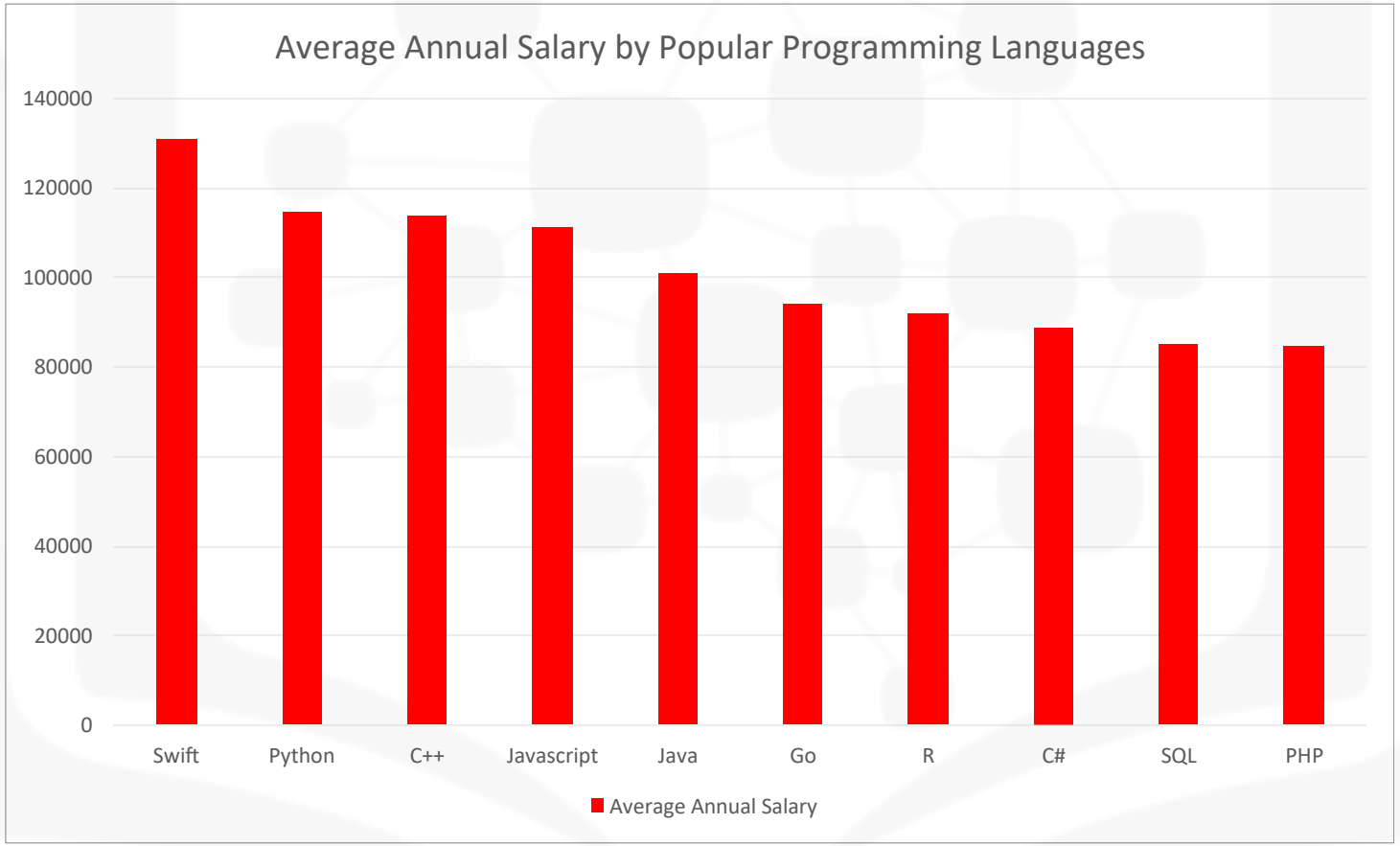
- Focus on Emerging Languages
- Professionals should diversify their skills beyond traditional relational databases
- Adapt Recruitment Strategies
- Continuous Learning
- Adaptation to Change
- Gender Diversity Initiatives

CONCLUSION

- Emerging Technologies are Shaping the Future
- Evolving Database Landscape
- Professional Development Needs
- Addressing Gender and Geographic Imbalances
- Continuous Learning is Essential



POPULAR LANGUAGES



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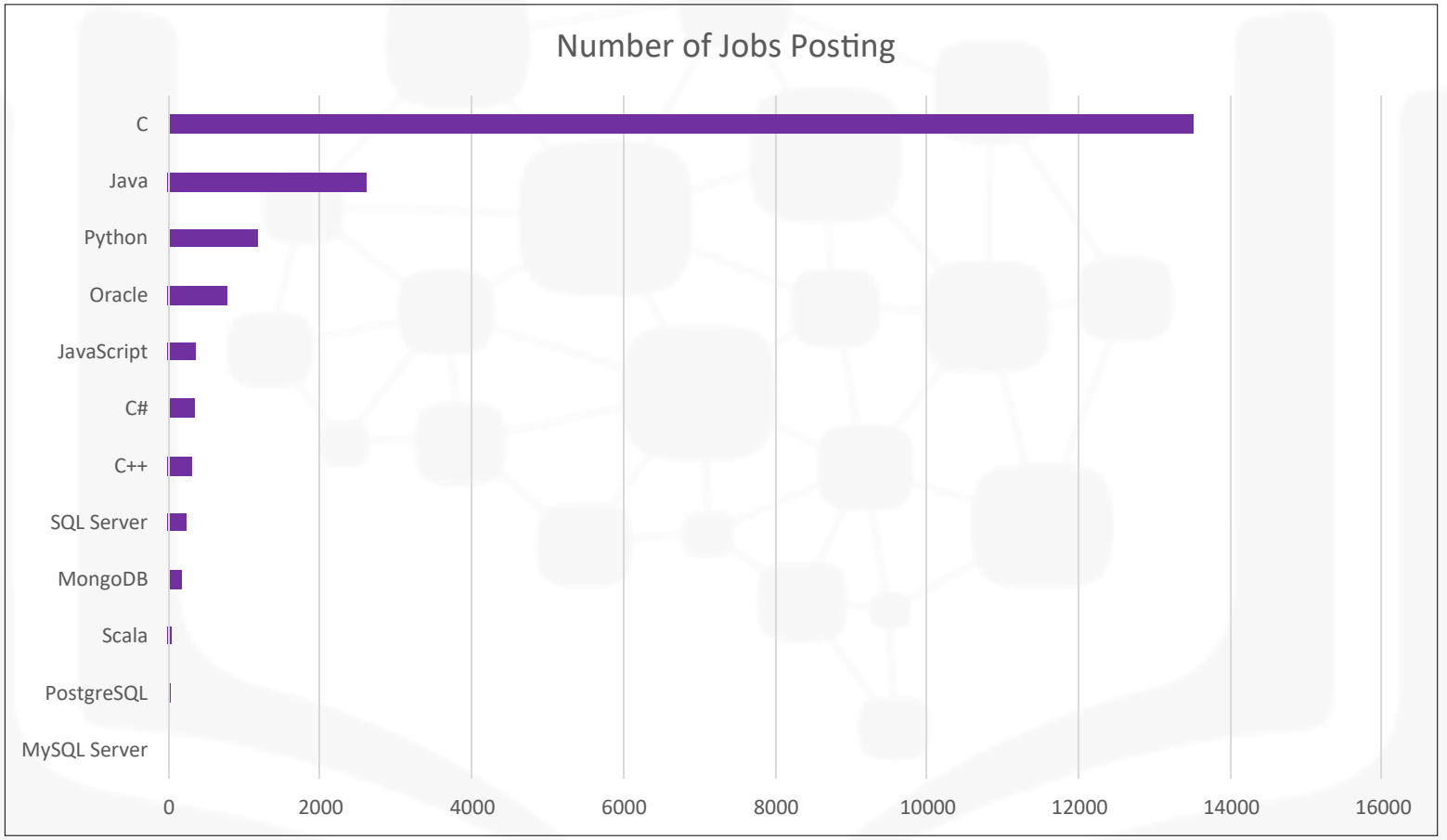
JOB POSTINGS



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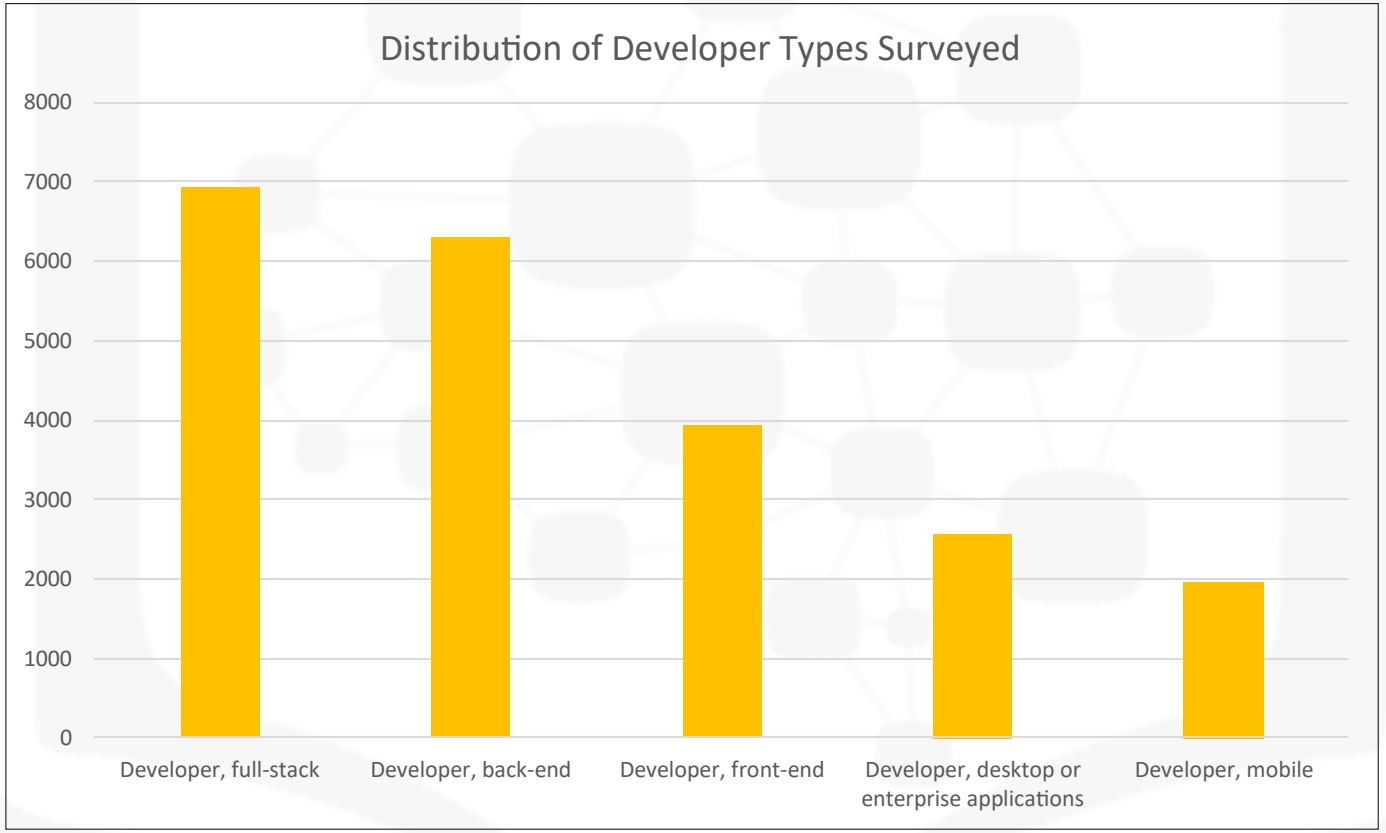
APPENDIX



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